

**Appl. No. 10/715,492**  
**Amdt. dated May 19, 2005**  
**Reply to Office Action of January 25, 2005**

### **REMARKS/ARGUMENTS**

Reconsideration of this application is respectfully requested.

Claims 19-35 are pending in the application with claims 1-18 having been canceled, and claims 19-35 having been currently amended.

Claim 30 has been allowed.

Applicants' amendment dated November 29, 2004 has been objected to under 37 C.F.R. § 1.126 because, according to the Examiner, it introduces new matter into the disclosure.

Specifically, according to the Examiner, the added material not supported by the original disclosure is:

"a. At page 2, line 27, the insertion of 'for example', since such insertion broadens the scope of the disclosed 'elevated process temperature' range and appears to find no basis in the disclosure as originally filed."

The language has been changed from "elevated process temperature for example from about 200°C up to about 750°C" to --elevated process temperature of from about 200°C up to about 750°C--.

"b. At page 3, lines 4-5, the phrase 'in amounts for example of about 50 to 500 ppm', since the corresponding disclosure re these specific amounts was not present in the original specification (see crossed out line in first full paragraph of original p. 3). It is suggested that this phrase be replaced with "in an effective amount" (per original p. 3, first full paragraph)."

The Examiner's suggestion has been followed.

"c. At page 3, lines 24-25, the replacement of 'either' with 'at least one of' and 'rarely' with 'sometimes', since such replacement broadens the scope of the disclosed values of 'X' and appears to find no basis in the disclosure as originally filed."

The language "The X represents at least one of aluminum, iron, lithium, magnesium, manganese, nickel, zinc or sometimes chromium." has been changed to --The X represents aluminum, iron, lithium, magnesium, manganese, nickel, zinc or chromium.--

"d. At page 4, line 16, the insertion of 'preferably', since such insertion broadens the scope of when the disclosed 'hydrothermally stable inorganic binder' is used and appears to find no basis in the disclosure as originally filed."

The sentence "For example, in more severe high temperature applications, such as fluid cracking catalyst (eg-700-820°C), a hydrothermally stable inorganic binder such as aluminum chlorohydrol or peptized alumina is preferably used." has been changed to --For example, in more severe high temperature applications, such as fluid cracking catalyst (eg-700-820°C), a hydrothermally stable inorganic binder such as aluminum chlorohydrol or peptized alumina may be used.-- It is submitted that this change is supported within the context of the paragraph in which it appears.

"e. At page 4, line 27, the replacement of 'comprising' with 'such as', since such replacement broadens the scope of the disclosed suitable 'surfactant' and appears to find no basis in the disclosure as originally filed."

The term "such as" has been changed back to "comprising".

"f. At page 6, line 11, the insertion of 'preferably', since such insertion broadens the scope of when the disclosed 'hydrothermally stable inorganic binder' is used and appears to find no basis in the disclosure as originally filed."

The sentence "For example, in more severe high temperature applications, such as fluid cracking catalyst (e.g.- 700-820 C), a hydrothermally stable inorganic binder such as aluminum chlorohydrol or peptized alumina is preferably used." has been changed to --For example, in more severe high temperature applications, such as fluid cracking catalyst (e.g.- 700-820 C), a hydrothermally stable inorganic binder such as aluminum chlorohydrol or peptized alumina may be used.-- It is submitted that this change is supported within the context of the paragraph in which it appears.

The disclosure has also been objected to for having minor informalities. Specifically:

"a. ... on page 12, the next to last paragraph, in the last two lines, the recited weight ratio of 'about 10:90 to 90:0 chlorite:hydrotalcite' (emphasis added) is not understood; what comprises the remainder of the 'mixture of magnesia-rich chlorite and hydrotalcite' ... when the hydrotalcite is not present? It is suggested that '0' be replaced with '10', per new claims 33 and 35 (basis being found, for

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example, in the paragraph bridging pp. 2-3 of the specification)."

The Examiner's suggestion has been followed.

"b. In the preamble of each of claims 20-25, it is suggested that 'improved process of sulfur oxide adsorption' be revised as 'process of sulfur oxide sorption', for consistency with claim 19 (upon which these claims ultimately depend)."

The preambles of claims 20-25 have been changed from "The improved process of sulfur oxide absorption claimed in claim" to -- The process of claim --.

The specification has been objected to as failing to provide proper antecedent basis for the claimed subject matter. Specifically, according to the Examiner:

"[C]lear antecedent basis for the following claim limitation has not been found in the specification: that the 'solid sorbent material contains hydrotalcite comprising a predominant proportion of magnesia'), as recited in new claim 29."

In the application as originally filed, claim 10 read, "In the process of Claim 7 wherein said solid sorbent material contains hydrotalcite consisting predominately of magnesia."

Accordingly, the specification has been amended in the paragraph beginning on page 7, at line 22, by inserting the sentence "In a preferred embodiment, the SO<sub>x</sub>-capturing additive is a solid sorbent material contains hydrotalcite consisting predominately of magnesia."

Claims 19-29 and 33-35 have been rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. According to the Examiner, the claims contain subject matter which was not described in the specification in such a way as to

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reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

Specifically, the Examiner has stated:

"With respect to new independent claim 19 (upon which claims 20-25 ultimately depend), it is not seen where the originally filed disclosure supports the limitations beginning with 'and where said sorbent material comprises a chlorite layered structure...' ... through the end of the claim. In particular, it appears that the sole section of the originally filed disclosure relating to the "absorbed" and "desorbed" conditions recited at the end of claim 19 is in Example 1 on page 11—however, in this example, chlorite is used alone, not in combination with 'at least one crystalline material comprising layers of brucite structure' (i.e., such as applicant's preferred hydrotalcite), as recited in claim 19."

Similar rejections for the same reasons have been applied to claims 26-29 and 33-35.

The Examiner's attention is directed to Example 2 on page 12 of the current specification. It is there stated, "The above example 1 is repeated with a mixture of 20 parts by weight of the magnesia-rich chlorite, 50 parts of 'Pural MG 70' hydrotalcite, 30 parts kaolin, and the same amounts of cerium and vanadium additives." It is submitted that this Example 2 clearly provides sufficient support for claims directed to the use of chlorite in combination with a crystalline material comprising layers of brucite structure (i.e., such as applicant's preferred hydrotalcite).

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The Examiner has also stated:

"Lastly, it is not seen where the originally filed disclosure supports the limitations of claim 25—namely, that the 'at least one chlorite and at least one hydrotalcite collectively contain... about 14 to 29 wt.% magnesia'. In contrast, note that original claim 6 required 'chlorite [(i.e., alone)] containing about 14 to 29 wt.% magnesia', as disclosed at page 2, lines 21-23."

Claim 25 has been amended to read, "The process of Claim 19 wherein said solid crystalline sorbent material consists essentially of at least one chlorite comprising about 14 to 29 wt% magnesia."

Accordingly, it is requested that the rejection of claims 19-29 and 33-35 under 35 U.S.C. § 112, first paragraph, be withdrawn.

Claims 21, 24, 29, 31 and 32 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regards as their invention.

Specifically, according to the Examiner:

"There is no basis for 'said adsorbent' (emphasis added), as recited in line 2 of claim 21, either in claim 21 itself or claim 19 (upon which it depends). Evidently, 'adsorbent' should be replaced with either 'sorbent material' or 'solid crystalline sorbent material'."

The Examiner's suggestion has been followed.

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"There is no basis for 'said phyllosilicate', as recited in line 2 of claim 24, either in claim 24 itself nor any preceding claim ... ."

Claim 24 has been made dependent upon claim 19 and "phyllosilicate" has been changed to "sorbent material".

"There is no basis for 'said solid sorbent material', as recited in line 1 of claim 29, either in claim 29 itself or claim 26 (upon which it depends). Evidently, 'sorbent' should be replaced with either 'adsorbent' or 'sulfur oxide absorbent'."

Claim 26 has been amended by changing "sulfur oxide absorbent material" to "sulfur oxide sorbent material". Claim 29 has been amended to refer to the "sulfur oxide sorbent material" of claim 26.

"There is no basis for 'said solid sorbent/catalyst', as recited in the last line of claim 32, either in claim 32 itself or claims 30-31 (upon which it depends), ..."

Claim 32 has been amended by changing "solid sorbent/catalyst" to "solid sorbent material having said oxidation catalyst disposed thereon", which has antecedent basis in claim 31.

"... [C]laim 31 itself may also be considered confusing due to the phrase 'having an oxidation catalysis... disposed thereon'. Replacing 'catalysis' with 'catalyst' in the penultimate line of claim 31 would overcome this rejection, in regards to claims 31 and 32."

The Examiner's suggestion has been followed.

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Claims 24 and 25 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner has stated, "Said claims are considered vague, indefinite, and/or confusing, in that each depends upon missing claim 23."

Claims 24 and 25 have been amended to be dependent upon claim 19.

Accordingly, it is requested that the rejection of claims 21, 24, 25, 29, 31 and 32 under 35 U.S.C. § 112, second paragraph, be withdrawn.

In view of the foregoing, it is submitted that this application is now in condition for allowance and an early Office Action to that end is earnestly solicited.

Respectfully submitted,

18 MAY 05  
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